

Why and How Was the Aphrodito Cadaster Made?

L. S. B. MacCoull

Domesday Book was undoubtedly conceived as a register of one kind or another, but ... its concerns were not necessarily those of the process that gathered the data.

– D. Roffe, *Domesday Decoded* xi

IN 1991 J. Lefort stated that “Il n’y aurait pas de cadastre à Byzance avant la fin du VIII^e siècle.”¹ Not exactly: the cadaster of the Egyptian town of Aphrodito, dated to before the summer of A.D. 524,² lists landholdings by owner/taxpayer, classifying them by fiscal-tenurial categories (city-registered, village-registered; private, imperial, and other) and

¹ J. Lefort, *Géométries du fisc byzantin* (Paris 1991) 19 n.39. This was unfortunately timed, for in the *Oxford Dictionary of Byzantium* (1991) the entry “Land Survey” by A. Kazhdan and the present writer (II 1174–1175) mentions the two papyrus cadasters from the fourth and sixth centuries (cf. also N. Oikonomides, “Cadaster,” I 363, giving the 1987 joint republication of the sixth-century document discussed here).

² Discovered by the present writer in February 1971: *SB* XX 14669 = *P.Freer* 1–2; L. S. B. MacCoull, *Greek and Coptic Papyri in the Freer Gallery of Art* (diss. Catholic Univ. 1973); Gascou in J. Gascou and L. MacCoull, “Le cadastre d’Aphroditô,” *TravMém* 10 (1987) 103–158 [hereafter “Gascou”], repr. Gascou, *Fiscalité et société en Egypte Byzantine* (Paris 2008) 247–305. I thank Craig S. Korr for a new set of photographs. See B. Palme, “The Range of Documentary Texts: Types and Categories,” in *Oxford Handbook of Papyrology* (Oxford 2009) 358–394, at 383 (for this document, instead of “Justinian” read “Justin I”). For the date see (first) C. Zuckerman, *Du village à l’empire: autour du registre fiscal d’Aphroditô* (Paris 2004) 32–40; and the forthcoming Aphrodito prosopography being made by G. Ruffini, s.n. Ioannes 66 (I thank him for sending me a draft version).

crop-yielding categories (sown land, reed land, vineyard land, garden land), and giving a surface area in arouras for each.³ Itself an excerpt from an earlier and longer survey,⁴ it drew on data compiled by, or under the supervision of, no fewer than three predecessors.⁵ This indicates a considerable expenditure of effort and manpower by the imperial Byzantine government in the first quarter of the sixth century.⁶ Can we figure out why and how all this effort was put forth, culminating in the document we have?

1. *Why?*

When Justin I, a veteran of the wars against Persia,⁷ succeeded Anastasius in 518 he inherited from his predecessor a famously full treasury.⁸ However, when Persian campaigning

³ See J. G. Keenan, "Byzantine Egyptian Villages," in *Egypt in the Byzantine World, 400–700* (Cambridge 2007) 226–243, at 238, and T. M. Hickey, "Aristocratic Landholding and the Economy of Byzantine Egypt," 288–308, at 300. Also, *P. Jena* II 18–20 (published 2010) are parts of three 5th/6th-century land surveys, possibly Hermopolite, employing various measurements and giving plot boundaries in S-N-E-W order (see pp.68–74).

⁴ G. Ruffini, *Social Networks in Byzantine Egypt* (Cambridge 2008) 176.

⁵ In reverse chronological order, they were John the *cenitor* and *scholasticus*, Mam(m)as, and Dioscorides: Zuckerman, *Du village à l'empire* 35–36, giving their attestations. Unlike Ptolemaic surveys, Byzantine ones do not appear to have been remade yearly, nor was the process of making them financed by a dedicated tax.

⁶ The article by N. Oikonomides, "De l'impôt de distribution à l'impôt de quotité: A propos du premier cadastre byzantin (7^e–9^e siècle)," *ΣΡVI* 26 (1987) 9–19, cited by Lefort, *Géométries* 19 n.39, though interesting, by its timing of publication in Belgrade just missed out on knowledge of the Aphrodito document. For bureaucratic surveying and frequency of tax-rate adjustment in Roman times, requiring manpower, see J. Rowlandson, *Landowners and Tenants in Roman Egypt* (Oxford 1996) 76–77 (a study focusing on the Oxyrhynchite).

⁷ G. Greatrex, *Rome and Persia at War, 502–532* (Leeds 1998) 94.

⁸ F. K. Haarer, *Anastasius I: Politics and Empire in the Late Roman World* (Cambridge 2006) 7, 10. J. C. Fossella, "Ahead of Their Time: Anastasius I and Economic Thought in Late Antiquity" (M.A. thesis, Louisiana Tech Univ. 2009) 71–75, pictures Anastasius, a career bureaucrat, as having

was renewed in Justin's reign,⁹ a reliable system for obtaining money to pay for the wars and materials to supply them was more important than ever.¹⁰ Our papyrus evidence reveals how the money and goods were sought from the empire's agrarian taxpayers through multiple assessments of its landholdings, especially in the well-documented province of Egypt, a guaranteed generator of wealth.¹¹

If *Novel* 166 on the *ἐπιβολή* (*adjectio sterilium*)¹² can be dated to 521,¹³ it can be read (over and above its direct local application

gained practical and theoretical knowledge of finance on the job (I thank him for sending me a copy).

⁹ B. Dignas and E. Winter, *Rome and Persia in Late Antiquity: Neighbours and Rivals* (Cambridge 2007) 38; Greatrex, *Rome and Persia at War* 130–137, 222. There may have also been need of funds with which to pay the Persians directly.

¹⁰ See D. Rathbone, "Military Finance and Supply," in *The Cambridge History of Greek and Roman Warfare* (Cambridge 2007) II 158–176, at 170–174. An average for one soldier was 1 artaba of grain per month (1 art. milled giving 30 loaves), plus wine, oil, and meat. Each governor allocated to each nome its quota for military supplies, and this was parceled out among the villages, like Aphrodito. Taxation in both kind and cash was key to all this. See e.g. F. Mitthof, *Ammona Militaris: Die Heeresversorgung im spätantiken Ägypten* (Florence 2001) II 187; for more data on soldiers at Antaeopolis later in the sixth century see J. Gascou, "La table budgétaire d'Antaeopolis (*P.Freer* 08.45 c+d)," in *Hommes et richesses dans l'Empire byzantin* I (Paris 1989) 279–313 (a document discovered simultaneously with the cadaster). See also B. Palme, "The Imperial Presence: Government and Army," in *Egypt in the Byzantine World* 244–270, esp. 258–262. A soldier's keep has been estimated as equivalent to 5½ solidi per year: C. Morrisson and J.-C. Cheynet, "Prices and Wages in the Byzantine World," in A. Laiou (ed.), *Economic History of Byzantium* (Washington 2002) II 815–878, at 871.

¹¹ For a recent assessment see A. Bowman, "Quantifying Egyptian Agriculture," in *Quantifying the Roman Economy: Methods and Problems* (Oxford 2009) 177–204, and R. Bagnall's response, 205–212.

¹² See W. Brandes and J. Haldon, "State Revenues and Expenditure," in *Oxford Handbook of Byzantine Studies* (Oxford 2008) 562–569, at 562–563.

¹³ It bears the name of Fl. Theodore Peter Demosthenes, PPO 521–522 and again 529 (*PLRE* II 353–354): he was later concerned with army storehouses for Justinian's Persian wars.

to Lydia) as showing that Justin I was concerned with the productivity of the empire's land and with schemes to ensure that land yielding no product would be reassigned to other holders¹⁴ in order to make sure that revenue (especially for military funding) would in fact be forthcoming.¹⁵ In addition, the augustal prefect of Egypt¹⁶ attested in office for 518/523 was the famous member of the Apion dynasty, Fl. Strategius (9),¹⁷ an imperial courtier with, like his father before him, close family ties to Justin I and his court and policies.¹⁸ This Strategius was in Alexandria before September 523 (as mentioned in Justinian's Edict 13.15–16). The son of Apion (2),¹⁹ who had been Anastasius' manager of supplies in his Persian wars, a praetorian prefect, and a convert to Chalcedonianism,²⁰ he himself also was later to be a negotiator in subsequent Persian campaigns.²¹ Such a representative of such an Egyptian family, with widespread holdings scattered around a number of nomes,²² was

¹⁴ Whether or not this measure reflects a central-government concern with landholding stability (seen through the old view of fleeing *coloni*) is still debatable: cf. J. Durliat, "La fuite des colons et des curiales à l'époque protomédiévale," in *Ordnung und Aufruhr im Mittelalter* (Frankfurt 1995) 339–362, at 359.

¹⁵ For earlier (Roman-period) versions of this see N. Lewis, *Life in Egypt under Roman Rule* (Oxford 1983) 166; in later Byzantium, Oikonomides, *ZRVI* 26 (1987) 17 (cf. 11–12).

¹⁶ For earlier comparanda cf. A. Jördens, *Statthalterliche Verwaltung in der römischen Kaiserzeit: Studien zum Praefectus Aegypti* (Stuttgart 2009) 103–108.

¹⁷ *PLRE* II 1034–1036. Ruffini, *Social Networks* 64, 88, 96, 97, 99, 145, 255. He is Hickey's "Strategios II."

¹⁸ See R. Mazza, "Noterelle prosopografiche in margine ad alcune pubblicazioni recenti riguardanti gli Apioni," *Simbls: scritti di storia antica* 4 (2004) 263–280, esp. 266–269.

¹⁹ *PLRE* II 111–112. Called "Apion I" in Ruffini, *Social Networks* 97 and generally.

²⁰ Mazza, *Simbls* 4 (2004) 264–266.

²¹ Cf. also *PLRE* IIIB 1200–1201.

²² The Oxyrhynchite, Herakleopolite, Arsinoite, and Kynopolite, and possibly elsewhere: Mazza, *Simbls* 4 (2004) 273–280.

thoroughly familiar with land management in Egypt and with methods of making it accountable to and profitable for the central government, especially in wartime.²³ (Since Egyptian practices varied from region to region, we see less of a role being played in the Antaeopolite nome by aristocratic *oikoi*—possibly except for that of Julian the former prefect.)²⁴ Finally, Anastasius' previous creation of a new version of the *patrimonium*, an imperial ministry for administering private property donated to the state treasury,²⁵ may be reflected in the Aphrodito cadaster's placing lands in that category in a special position, though this is debated.²⁶ I think the directive to carry out this accounting procedure was prompted by Justin I's concern for his money supply when another war with Persia was looming, a concern brought home to him by officials who were only too familiar with the problems of campaigning against the perennial enemy. The Aphrodito cadaster in its historical context probably stands for many such surveys executed all over the empire that have not survived.²⁷

²³ He was concerned above all with collection of the *embolê*.

²⁴ R. S. Bagnall, "Village Landholding in Comparative Perspective," in *Les archives de Dioscore d'Aphrodité cent ans après leur découverte: histoire et culture dans l'Égypte byzantine* (Paris 2008) 181–190, at 188 with n.16; Ruffini, *Prosopography* [draft version] Ioulianos 1 (and 2?). See also M. Mirkovic, "Count Ammonios and Paying Taxes in the Name of Somebody Else in the Cadastre from Aphrodito," in †T. Gagos (ed.), *Proceedings of the 25th International Congress of Papyrology* (Ann Arbor 2010) 565–572.

²⁵ Haarer, *Anastasius I* 197–199. For earlier comparanda cf. D. Rathbone, "Roman Egypt," in *The Cambridge Economic History of the Greco-Roman World* (Cambridge 2007) 698–719, at 707.

²⁶ Gascou (115) thinks not, interpreting the *πατρ(ε)μονιαλία* of lines 298 and 299 of our document as lands of the old *patrimonium principis* now in private hands. I thank Kent Rigsby for a word-search in the TLG and for checking in S. Daris, *Il lessico latino nel Greco d'Egitto*² (Barcelona 1991) 87–88.

²⁷ For interesting later comparanda see J. Percival, "The Precursors of Domesday: Roman and Carolingian Land Registers," in *Domesday Book: A Reassessment* (London 1985) 5–27 (7–13 for a brief look at some Roman evidence), and M. Innes, "Framing the Carolingian Economy," *Journal of Agrarian Change* 9 (2009) 42–58, at 44–46, 54–55. In a way it helps to read

2. *How?*

SB XX 14669 is, interestingly, in roll form, not a codex like its near successor of A.D. 525/6, the so-called *P.Aphrod.Reg.*, that for its part reckons up quantities of money tax, not amounts of land area.²⁸ Its size, layout, and graphic qualities form and convey the meaning that the document carries. Our document is a prime example of what has come to be called pragmatic literacy.²⁹ The onomastic, geographical, and numerical data that it tabulates and sums up had to have been collected by systematic enquiries made by qualified personnel, and this process necessarily involved locals on the spot.³⁰ Surveyors measured,³¹ data-gatherers asked,³² and professional scribes wrote down

our cadaster as in its way a kind of mini-proto-“polyptych,” though of course it is not itself a “manorial” survey as such. For a “peasant elite familiar with market economies” in the later West cf. P. R. Schofield, “The Social Economy of the Medieval Village in the Early Fourteenth Century,” *Economic History Review* 61 Suppl. 1 (2008) 38–63, at 59. For closer to our period see, also in *Journal of Agrarian Change* 9 (2009), P. Sarris, “Aristocrats, Peasants and the Transformation of Rural Society, c.400–800,” 3–22, esp. 7–8, 14; J. Banaji, “Aristocracies, Peasantries and the Framing of the Early Middle Ages,” 59–91, esp. 67–68, 82; and M. Whittow, “Early Medieval Byzantium and the End of the Ancient World,” 134–153, esp. 135, 141.

²⁸ Zuckerman, *Du village à l'empire*. The roll form of the cadaster may reflect its nature as a partial and recently-compiled document as opposed to the permanent record formatted as a codex for later consultation and citation. Like a charter, our cadaster was a stylized record of something that had already been done. *P.Jena II 19* for its part is clearly a codex leaf; it includes the categories of reed land and vineyard land.

²⁹ F.-J. Arlinghaus, “Account Books,” in *Transforming the Medieval World: Uses of Pragmatic Literacy in the Middle Ages* (Turnhout 2006) 43–69.

³⁰ Ruffini, *Social Networks* 99: “fiscal responsibility in the ancient world implied some social interaction.” For earlier comparanda cf. J. G. Manning, “Hellenistic Egypt,” in *Cambridge Economic History of the Greco-Roman World* 434–459, at 449, 455. On the local character of taxation see Palme, in *Egypt in the Byzantine World* 250.

³¹ E.g. the sixth-century Christodorus in *P.Ant. II 96.4–5*. Compare *Nov. 128.4*.

³² Especially, it seems, about land that has recently changed hands, of which there seems to have been quite a lot in the area. Though Gascou

and added up the results:³³ these people were often hired from among the employees of the largest landowners themselves.³⁴

The principal entity from which tax was collected was the unit of land measured by surface area and classified by category. Such a survey, carried out at whatever intervals, assessed how much land, of what tenorial category, was growing what kind of crop. Careful measurement and classification would enable accurate estimation of what economic returns the state could expect,³⁵ bearing in mind that documentary and administrative practices tended to vary by region. Of the nine

(109–110) interpreted the often-used expression ἀπὸ ἐκβ(ολῆς) as “par suite d’expulsion,” J. Banaji (*Agrarian Change in Late Antiquity*² [Oxford 2007] 195) prefers to read it as “following the expiry of the lease held by.” Cf. *P.Cair.Masp.* I 67117.13, dating to Epeiph (June/July) 524, one of the parties to which is a priest of the holy *topos* and *euktêrion* of Apa Dios (including the Apa Dios *xeneôn* of *SB XX* 14669.86 and elsewhere?): “the lease expiry having been entered in the *apographê* of John the *scholasticus* and *censitor*.”

³³ Probably using tables and algorithms like the earlier *P.Chic.* 3 (A. Jones, “Mathematics, Science, and Medicine in the Papyri,” in *Oxford Handbook of Papyrology* 338–357, at 340–342) or the later *P.Kopt.Unterricht* 331–332 (= *P.Lond.Copt.* I 528 descr.).

³⁴ R. S. Bagnall, *Egypt in Late Antiquity* (Princeton 1993) 153–160; M. R. Falivene, “Geography and Administration in Egypt,” in *Oxford Handbook of Papyrology* 521–540, at 535. Gascou (104) discerns the hands of two scribes in our document: the second hand is that of the scribe-accountant adding up the totals for categories at the end of each column (107).

³⁵ What was being sought by the system in place was a measuring of land area so as to then assess what percentage of the crop yield of which category of productive land would go to the government in tax in kind, such as wheat for the annona of Constantinople (and then converting that amount into a money value, usually in bronze then converted into gold), not, as after the seventh century, assessing the value of each parcel of land and then computing tax on that basis (A. E. Laiou and C. Morrisson, *The Byzantine Economy* [Cambridge 2007] 50–51) or further reverse-reckoning to check how much land a payer of *x* sum of tax was entitled to hold (Oikonomides, *ζRVI* 26 [1987] 17–18). In Roman times vineyard and garden land had been taxed in money, sown land in grain (wheat) (Rowlandson, *Landowners* 19). For earlier comparanda see also J. G. Manning, *Land and Power in Ptolemaic Egypt* (Cambridge 2003) 122, 145.

preserved columns of *SB* XX 14699, all nine have sums at the bottom, while the end of col. 9 (the best-preserved column, since the roll was rolled up from right to left leaving it in the center)³⁶ contains global totals for all the various categories and for Aphrodito taken as a whole. Here I focus on the global totals to ask how they were obtained and what information they would have furnished to the Byzantine state.³⁷ In integrating data from this cadaster with data from related Aphrodito documents, Zuckerman reminds us that what the cadaster itself records is a special category: areas of urban property, that is, Aphroditan lands owned by non-residents,³⁸ largely persons living (and institutions located) in the nome-capital Antaeopolis, that paid tax to a collection center in that city—they are labeled ἀστικ(ᾶ) ὀνόμ(ατα)—rather than to the village.³⁹ Data on lands of the autopract village of Aphrodito itself are not included (or are not preserved) as such—when present they have been entered from an earlier document⁴⁰—so when global tax

³⁶ The beginning, which would have been on the outside, has been lost. Col. 1 as preserved was not the first column to have existed, since its first entry contains the words τῶν αὐτῶν, implying previous data. See Gasco 107.

³⁷ Building on Bagnall, in *Les archives de Dioscore* 181–190.

³⁸ H. Saradi, *The Byzantine City in the Sixth Century: Literary Images and Historical Reality* (Athens 2006) 448–449 with n.2517, notes that 70% of Aphrodito’s landowners were “citizens of a city or state officers.”

³⁹ Of the tax-paying entities we have, four are marked as κομητικ(όν), translated by Gasco as “paye au village.” They include two persons, a church, and a hospice (ξενεών) that is also listed elsewhere in the document without this marker. See Gasco 113–114. The complementary register, in money, covers village property (κομητικά). Frustratingly, these same individuals and institutions found in the cadaster do not appear in the register. It has to be remembered that since the reign of Leo I (457–474) the village of Aphrodito had enjoyed the right of collecting its own taxes (*autopragia*). Some have seen conflict in this city/village dichotomy: “Aphrodito was only united when it faced off other villages and threats from Antaiopolis” (C. Wickham, *The Inheritance of Rome* [London 2009] 38).

⁴⁰ In col. 9 line 294 (at end) we have listed for κώμ(η) Ἀφροδίτ(η) the following global figures, clearly taken from another, earlier, document: of

amounts were added up the sums would have been partially based on additional amounts that we do not see in *SB XX 14669* itself.⁴¹ Nonetheless, focusing on the data enables us to appraise them in terms of the process that gathered them and explore the interaction of content and purpose discernible in the document as an artefact in its own right.⁴²

TABLE 1: Aphrodito urban properties by crop category, with areas

Col.	Entities*	Sown†	Reed	Vineyard	Garden
1	26	127.1875	0	0	0
2	23	[x].46875	0	2.875	1.125
3	24	145.515625	0	4.875	4.8125
4	21	148.484375	0	0	3.375
5	23	208.234375	0	0.8125	2.375
6	20	198	6.625	4.1875	4.3125
7	22	148.890625	4.390625	5.25	10.375
8	20	122	0	2.8125	18.84375
9	6				
		<u>31.484375</u>	<u>1</u>	<u>0.4375</u>	<u>17.125</u>
totals		1129.796875+	12.015625‡	21.24	62.34375

Col. 9 lines 292 (at left)–293 lists, of the *astika onomata*:

Sown: 1375.625 Reed: 12 Vineyard: 21.5 Garden: 61.78125

* individual person, collectivity of heirs, ecclesiastical institution⁴³

† this and the next three in arouras

‡ amount seemingly missing from col. 2 and lost 1st col. not included: see below

sown land (*σπο[ρίμης]* [*γῆς*]) 5200 arouras, of reed-growing (land) (*θρ[υίδος]*) 34.875 arouras, of vineyard (land) (*ἀμ[πέλου]*) 101 arouras, of garden (land) (*παρ[αδείσου]*) 570.5 arouras: this would total 5906.375 ar. in all (the figure of 5900 is given also by Banaji, *Agrarian Change* 10, tallying it as some 10% of the entire Antaeopolite's sown land). See below.

⁴¹ Zuckerman, *Du village à l'empire* 22; cf. Gascou 113.

⁴² Cf. D. Roffe, *Domesday Decoded* (Woodbridge 2007) xii, 23–26 (a study most illuminating for a papyrologist).

⁴³ For this last, L. S. B. MacCoull, “Monastic and Church Landholding in the Aphrodito Cadaster,” poster at the 26th International Congress of Papyrology, Geneva 2010; cf. Bagnall, in *Les archives de Dioscore* 184–185.

These figures (totaling 1470.90625 ar.) imply that: of the sown-land totals, 245.359375 ar. are lacking from what is missing from col. 2 and the not-preserved original first column; perhaps a bit of vineyard land is missing from col. 1; and of the garden land, some has been either overreported or else under-calculated at the end stage.⁴⁴

The next line, 294, gives the global totals for the village as stated above (n.33), totaling 5906.375 ar. for all crop categories. Overall this works out to show that the urban properties in all crop categories comprised about 25% of the total, leaving village properties as 75%. By crop category, urban owners owned about 25% of the sown land, 33⅓% of the reed land, 20% of the vineyard land, and 11% of the garden land.⁴⁵ Subtraction of the *astika* totals from the total for Aphrodito here would give a remainder of 4435.46875 ar. for the *kômêtika* (75% of the sown, 66⅔% of reed, 80% of vineyard, and 89% of garden).

In lines 295–301 we have a shift in perspective. These lines give a further breakdown of those 5200 arouras (1430 ha, 3536 acres) of Aphroditan sown land (from line 294 at end):

TABLE 2: Sown land by fiscal/tenurial category

Of private possession [ἰδιωτικῆς κτ(ήσεως)]:	4130.0000000
Of imperial possession [βασιλικῆς κτ(ήσεως)]: ⁴⁶	587.05078125
Of “island” ⁴⁷ possession [νησιωτικῆς κτ(ήσεως)]:	316.48046875
Of imperial <i>patrimonialia</i> ⁴⁸ [βασιλικῆς πατρε(μουνιαλίας)]:	36.02343750

⁴⁴ Gascou 107, 113.

⁴⁵ Gascou 113.

⁴⁶ Gascou (115) noted the attestation of these dual categories at such a late date. The point is that privately-owned land and *basiliké* [imperial]/“public” land, including subcategories of the latter, would have been taxed (in grain) at different rates. The system changed after Diocletian and subsequently: see Rowlandson, *Landowners* 64–69.

⁴⁷ Land emerging from the Nile flood thanks to accumulated silt buildup (Gascou 115; Rowlandson, *Landowners* 34). In this document there are no data to help us understand how officials made allowances for annual variations in the Nile flood.

Of “island” <i>patrimonialia</i> [<i>νησ(ιωτικῆς) πατρε(μουνιαλίας)</i>]:	74.58593750
Of imperial revenue-yielding land: ⁴⁹	12.69531250
Of “island” revenue-yielding land:	<u>43.16406250</u>
	5200.00000000

(It can be seen with what minute accuracy the measuring operations were carried out: in our notation, to eight decimal places.)⁵⁰ Since there is no indication of these categories in the earlier columns of *SB XX* 14699, we can conclude that they were flagged in, and the figures taken from, an earlier document, probably one prepared by another data-collector. Adding up all three area amounts that are identified as *basilikê*—owned, “island,” and *obventio*—gives a total of just over 635³/₄ ar.: thus the proportion of all *basilikê* to *idiôtikê* is roughly 1 : 6¹/₂.⁵¹

Next, lines 302 and 303 simply repeat the previously-given totals of reed 34.875 ar., vineyard 101 ar. (from line 294 at end). Line 304 gives as follows, copying figures from line 293 at left: Subtract, on behalf of city proprietors, (*ὑπὲρ*) *ἀστικ(ῶν) κτητόρ(ων)*: sown, 1375.625 ar.; reed, 12 ar.; vineyard, 21.5 ar.; garden, 61.78125 ar. (this would total 1470.90625 ar. for “city proprietors”).⁵² Finally, lines 305–307 give the remainders for the village of Aphrodito: sown, 3824.375 ar.; reed, 22.875

⁴⁸ Notwithstanding the usages in the seventh-century *CPR IX* 45, I still think this term here designates land transferred to the imperial treasury—a category with which Justin I would have been particularly concerned in planning for war, especially if it meant a higher tax rate.

⁴⁹ This is the *οβο()* that I interpret as a Latinism from *obventio* (L. S. B. MacCoul, “A Further Note on *P.Freer* 08.45 (a+b) 300–301,” *Analecta Papyrologica* 6 [1994] 161–162).

⁵⁰ This accuracy may reflect what was in fact an estimate on the part of the surveyors and the recording scribe. Just to emphasize the accuracy I have departed from the more usual strict papyrological practice of retaining the calculation with very small fractions (cf. *P.Oxy.* LV pp.127–128), for the sake of clarity in the visual presentation.

⁵¹ Cf. Rowlandson, *Landowners* 65–67.

⁵² Cf. Gascou 113.

ar.; vineyard, 79.5 ar.; garden, 508.75 ar. (this would total 4435.5 ar.); and line 308 adds together the sown land and reed land to give a correct total of 3847.25 ar., copying the previous figures for vineyard and garden.

Were these meticulously detailed data gathered in a process⁵³ that operated in some sort of geographical order, possibly reminiscent of the field-by-field procedure of earlier Ptolemaic times or the house-to-house tax procedures of Roman times? The names of taxpaying entities—both persons and institutions—are repeated again and again, so officials do not seem to have been executing a sweep that covered and reported on each person or institution just once. The total area of the Antaeopolite nome has been calculated as 193,753 arouras (531 sq. km; 52,582 ha; 131,752 acres)⁵⁴ with the distance from Panopolis to Antaeopolis being 58 km (36 miles).⁵⁵ Average travel rates for officials have been estimated as 20 miles (32+ km) per day; fast travel could attain 50 miles (almost 80.5 km) per day.⁵⁶ The Aphrodito total of 5906.375 arouras (16.27 sq. km) measured for this survey could have been covered in perhaps a couple of days' travel plus allowing for time for the measurements actually being carried out on the ground, bearing in

⁵³ For a Ptolemaic example see A. Verhoogt, *Regaling Officials in Ptolemaic Egypt* (Pap.Lugd.Bat. 32 [2005]), esp. 4–6; and cf. the expression *κατὰ φύλλον γεωμετρία* for “survey according to crops” (5).

⁵⁴ So all of Aphrodito itself amounted to just over 3% of the surface area of the entire nome. Aphrodito's 5200 ar. of sown land was just 2.7% of that surface area. I have not yet seen I. Marthot, “The Antaiopolite Nome Villages,” paper at the 26th International Congress of Papyrology, Geneva, August 2010.

⁵⁵ Bagnall, *Egypt in Late Antiquity* 334.

⁵⁶ C. Adams, “‘There and Back Again’: Getting Around in Roman Egypt,” in *Travel and Geography in the Roman Empire* (London 2001) 138–166, esp. 153, 160–163; faster rates reported in J. Matthews, *The Journey of Theophanes: Travel, Business and Daily Life in the Roman East* (New Haven 2006) 49–50, with an average speed estimated at 5 mph (8 kph). Cf. Verhoogt, *Regaling Officials* 72–73 (a 15-day survey), 165 (a 9-day survey).

mind that holdings would have been widely scattered according to the usual practice.

What would these meticulously detailed data have given the Byzantine government to expect from this one town? It depends on the tax rates for the categories, especially of those 635^{3/4}+ arouras of *basiliké* which would have been expected to provide more artabas of wheat per aroura than the *idiôtiké*, on the one hand, and of the vineyard and garden land taxed in money, on the other. If the “imperial” land was taxed at a high rate of 5, 7, or 8 art./ar.,⁵⁷ the highest rate would give 5088 artabas of grain towards, for example, provisioning soldiers. If, however, some of that “imperial” land was actually the special category of “classed as private,”⁵⁸ the product would be far less, perhaps 1.6–2 art./ar.⁵⁹ giving 1272 artabas at most. Hence, one would think, the very careful data collection. The accountants themselves would have known the current rates which are, frustratingly, not spelled out in our document. Money taxes on the 101 arouras of vineyard land and the 570.5 arouras of garden land—sites of labor-intensive undertakings that prompted landowners to spend significant sums of money investing in irrigation machinery—are also not specified here. In addition, while twenty-one religious institutions are listed throughout the document as owning entities, no special category is made for their holdings—38% of the *astika*, 6.3% of the *kômêtika* by recent reckonings⁶⁰—as a list apart.

⁵⁷ Rowlandson, *Landlords* 29–30, 33, 64 (with n.120), 72, 79; for high rates in the Roman period cf. Lewis, *Life in Egypt* 165–166. *P.Oxy.* XVI 1915 of A.D. 555–557, after the plague pandemic, reflects allowable deductions for “time out of mind” categories. The figures here in 520s Aphrodito seem to approach ³/₄ of the expected yield: this must reflect rental terms, i.e. people paying for the use of the land.

⁵⁸ Rowlandson, *Landlords* 33, 72 n.3, 78–79.

⁵⁹ Bagnall, *Egypt in Late Antiquity* 156.

⁶⁰ Bagnall, in *Les archives de Dioscore* 184; Zuckerman, *Du village à l'empire* 226–228; MacCoull, “Monastic and Church Landholding” (n.43 above); also Mirkovic, in *Proceedings* 569 n.10.

3. *Conclusions*

Local Antaeopolite personnel working for the Byzantine government would have had to execute three operations to produce this document. They would have researched previous records held in the nome capital, canvassed individuals and the representatives of institutions, and traveled about the land itself with measuring devices to check old figures and obtain new ones. When the scribes recorded and totted up their data points⁶¹ they were creating a valuable window into the process by which Aphrodito's micro-economy fed directly into the Mediterranean-wide macro-economy, providing light on both the fiscal potential and the social meaning of property.⁶² In search of funds for the empire and witnessing to the structural link between war and taxation,⁶³ they gave us a picture of how local elites (individuals and institutions) and local conditions connected with the revenue-collecting central state.⁶⁴

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Society for Coptic Archaeology
(North America)
hafflele@asu.edu

⁶¹ And note that in his prosopography Ruffini describes *P.Cair.Masp.* II 67224 as an unpublished cadaster roll—so more data will be forthcoming.

⁶² Cf. J. M. H. Smith, *Europe After Rome* (Oxford 2005) 151, 161.

⁶³ K. W. Harl, *Coinage in the Roman Economy, 300 BC to AD 700* (Baltimore 1996) 248–249, 284–288. on the nexus among war, taxation, currency, and record-keeping.

⁶⁴ In memory of Traianos Gagos (1960–2010) and, as always, of Mirrit Boutros Ghali, both of whom valued Egyptian documentation of Greek-language civility.